Module 5

Section of solids and Development of Surfaces- Question bank

1.	A square prism, side of base 30 mm and axis 60 mm long, rests with its base on HP and one of its rectangular faces is inclined at 30° to VP. A section plane perpendicular to VP and inclined at 60° to HP cuts the axis of the prism at a point 20 mm from its top end. Draw (i) sectional top view and (ii) true shape of section.
2.	A hexagonal prism of base side 30 mm and axis length 60 mm is resting on HP on one of its bases with two of the vertical faces perpendicular to VP. It is cut by a plane inclined at 50° to HP and perpendicular to VP and passing through a point at a distance 12 mm to the top base. Draw (i) sectional top view and (ii) true shape of section.
3.	A pentagonal pyramid, side of base 30 mm and axis 60 mm long, rests with its base on HP and an edge of its base is parallel to VP. A section plane perpendicular to VP and inclined at 45° to HP passes through the axis at a point 35 mm above the base. Draw (i) sectional top view and (ii) true shape of section.
4.	A square pyramid of base 30 mm and axis 60 mm long is standing on HP with its base edges equally inclined to VP. It is cut by a section plane perpendicular to VP and inclined at 30° to HP, bisecting the axis. Draw (i) sectional top view and (ii) true shape of section.
5.	A hexagonal pyramid, side of base 25 mm and altitude 70 mm long, rests with its base on HP with two of its base sides parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 45° to HP and passing through a point 15 mm above the base and located on the axis. Draw (i) sectional top view and (ii) true shape of section.
6.	A cylinder of diameter 40 mm and height 60 mm is having its axis vertical. It is cut by a plane perpendicular to VP and inclined at 30° to HP. The plane bisects the axis of the cylinder. Draw (i) sectional top view and (ii) true shape of section.
7.	A cone, base 50 mm diameter and axis 65 mm long, rests with its base on HP. It is cut by a section plane perpendicular to VP, inclined at 45º to HP and passing through a point on the axis 35 mm above the base. Draw (i) sectional top view and (ii) true shape of section.
8.	A cone, base 40 mm diameter and axis 60 mm long, rests with its base on HP. It is cut by a section plane perpendicular to VP, parallel to one of the end generators and passing through a point on the axis 25 mm from the apex. Draw (i) sectional top view and (ii) true shape of section.
9.	A hexagonal pyramid side of base 30 mm and altitude 70 mm rests with its base on HP and with a side of base parallel to VP. It is cut by a cutting plane inclined at 35° to HP and perpendicular to VP and is bisecting the axis. Draw (i) sectional top view and (ii) true shape of section.
10.	A cylinder of base diameter 45 mm and height 65 mm rests on its base on HP. It is cut by a plane perpendicular to VP and inclined at 30 to HP and meets the axis at a distance 30 mm from base. Draw (i) sectional top view and (ii) true shape of section.
11.	A hexagonal prism, edge of base 20 mm and axis 50 mm long, rests with its base on HP such that one of its rectangular faces is parallel to VP. It is cut by a plane perpendicular to VP, inclined at 45° to HP and passing through the right corner of the top face of the prism. Draw (i) simple position of solid and (ii) development of its lateral surface.

12.	A pentagonal prism, side of base 25 mm and altitude 50 mm, rests on its base on the HP such that an edge of the base is parallel to VP and nearer to the observer. It is cut by a plane inclined at 45° to HP, perpendicular to VP and passing through the center of the axis. Draw (i) simple position of solid and (ii) development of its lateral surface.
13.	A cylinder of base diameter 50 mm and axis length 60 mm is resting on HP on its base, cut by a plane inclined at 55° to HP and perpendicular to VP. The cutting plane is passing through a point on the axis at a distance 30 mm from the top end. Draw (i) simple position of solid and (ii) development of its lateral surface.
14.	The cylinder of diameter 50 mm and axis 70 mm when sectioned by a plane inclined at 40° to HP and perpendicular to VP and bisecting the axis. Draw (i) simple position of solid and (ii) development of its lateral surface.
15.	A regular hexagonal pyramid of side of base 30 mm and height 60 mm is resting vertically on its base on HP such that two of the sides of the base are perpendicular to VP. It is cut by a plane inclined at 40° to HP and perpendicular to VP. The cutting plane bisects the axis of the pyramid. Draw (i) simple position of solid and (ii) development of its lateral surface.
16.	A pentagonal pyramid, side of base 30 mm and height 52 mm, stands with its base on HP and an edge of the base is parallel to VP and nearer to it. It is cut by a plane perpendicular to VP, inclined at 40° to HP and passing through a point on the axis, 32 mm above the base. Draw the sectional top view. Draw (i) simple position of solid and (ii) development of its lateral surface.
17.	A square pyramid, base 35 mm side, axis 70 mm long, rests on its base on HP such that two adjacent sides of the base are equally inclined to VP. It is sectioned by a plane perpendicular to VP, inclined at 30° to HP and passing through the mid-point of the axis. Draw (i) simple position of solid and (ii) development of its lateral surface.
18.	A cone of base diameter 60 mm and height 70 mm is resting on its base on HP. It is cut by a plane perpendicular to VP and inclined at 30° to HP. The plane bisects the axis of the cone. Draw (i) simple position of solid and (ii) development of its lateral surface.
19.	A cone of base 50 mm diameter and 60 mm height, rests with its base on HP. It is cut by a section plane perpendicular to VP, parallel to one of the generators and passing through a point on the axis at a distance of 22 mm from the apex. Draw (i) simple position of solid and (ii) development of its lateral surface.